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(12) United States Patent
Loveday et al.**(10) Patent No.: US 6,271,323 B1****(45) Date of Patent: *Aug. 7, 2001****(54) MIXED CATALYST COMPOUNDS,
CATALYST SYSTEMS AND THEIR USE IN A
POLYMERIZATION PROCESS****(75) Inventors: Donald R. Loveday; David H.
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Houston, TX (US)****(*) Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.This patent is subject to a terminal dis-
claimer.**(21) Appl. No.: 09/428,576****(22) Filed: Oct. 28, 1999****(51) Int. Cl.⁷ C08F 4/64****(52) U.S. Cl. 526/161; 526/113; 526/127;
526/128; 526/129; 526/172; 526/348.2;
526/348.5; 526/348.6****(58) Field of Search 526/127, 128,
526/129, 172, 941, 943, 348.2, 348.5, 348.6,
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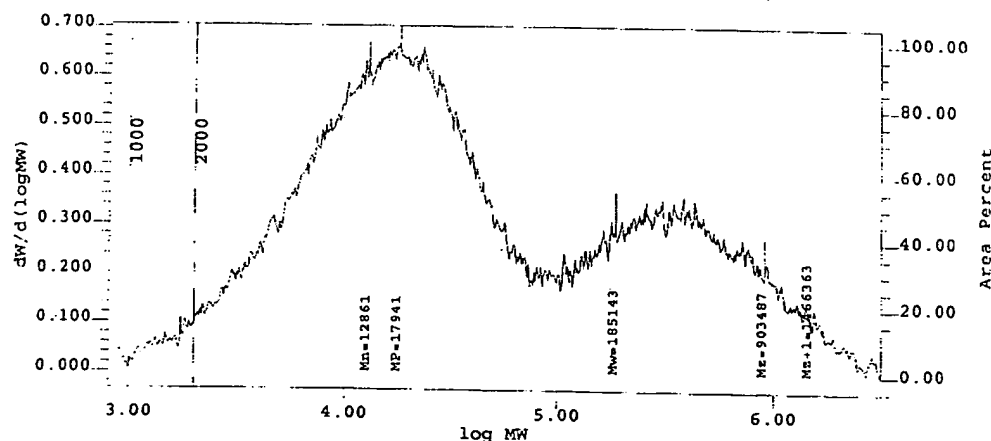
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Primary Examiner—David W. Wu*Assistant Examiner*—William Cheung**(74) Attorney, Agent, or Firm**—Jaimes Sher; Lisa Kimes
Jones**(57) ABSTRACT**The present invention relates to mixed catalyst compositions
of a Group 15 containing hafnium catalyst compound and a
bulky ligand metallocene-type catalyst compound, a unsup-
ported and supported catalyst systems thereof and to a
process for polymerizing olefin(s) utilizing them.**15 Claims, 1 Drawing Sheet**

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